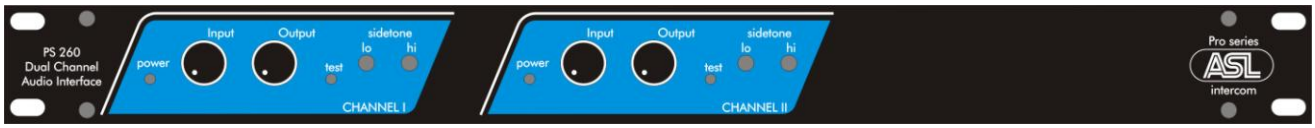
PS 260T

DUAL CHANNEL AUDIO INTERFACE



USER MANUAL

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1.0 GENERAL DESCRIPTION

The PS 260T is designed to interface the party lines of the ASL intercom system to external audio equipment or 4-wire communication systems.

Applications may be:
Temporarily extending a fixed installed 4-wire intercom system with a portable ASL intercom set for use on location, connecting an ASL intercom system to a (4-wire) camera CCU, injecting an external audio signal into an ASL intercom party line, monitoring the audio of an ASL intercom party line by external equipment such as recorders or paging systems, etc.

The PS 260T includes two separate and identical interface modules. Each interface has its Intercom Line connectors and its Audio Line connectors (input and output), positioned on the rear of the PS 260T.

The electronic circuitry of each interface is powered by the 30V DC power supplied via the intercom party line.
The unbalanced signal on the audio wire of the ASL party line appears on the PS 260T audio output connector after being converted to a balanced signal. The signals brought to the audio input connector are placed on the audio wire of the intercom line connector.

Two-stage side tone trimmers avoid that audio input signals appear at the audio output connector. The input/output separation is better than 30 dB from 200 Hz to 20 kHz. The built-in test tone generator assists to adjust or check the side tone levels.

The audio inputs and audio outputs of the PS 260T are transformer balanced.

2.0 UNPACKING

The shipping carton contains the parts listed below
* The PS 260T
* User manual

If any are missing, contact your dealer.

ASL has taken great care to ensure this product reaches you in flawless condition.

After unpacking the unit please inspect for any physical damage to the unit, and retain the shipping carton and relevant packing materials for use should the unit need returning.

If any damage has occurred, please notify your dealer so that a written claim can be initiated. Please also refer to the warranty section of this manual.

3.0 WARRANTY

This unit is warranted by ASL Intercom to the original end-user purchaser against defects in workmanship and materials in its manufacture for a period of one year from the date of shipment to the end-user.

Faults arising from misuse, unauthorized modifications or accidents are not covered by this warranty. If the unit is faulty, it should be sent in its original packing to the supplier or your local ASL dealer, with shipping prepaid. A note must be included stating the faults found and a copy of the original suppliers invoice.

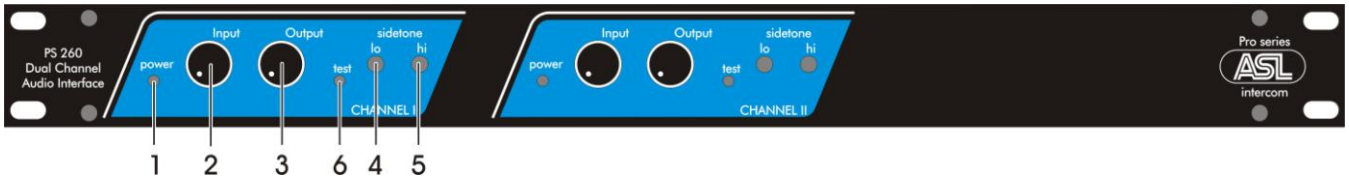
4.0 MECHANICAL INSTALLATION

To connect the PS 260T to an ASL party line intercom system and to external audio equipment or a 4-wire intercom system, use professional flexible microphone cable with 2 wires and 1 shield only.
The party line cables are to be connected to the INTERCOM LINE connectors on the rear of the PS 260T. The cables from/to external audio equipment or of a 4-wire intercom system are to be connected to the AUDIO LINE connectors (input & output), also on the rear of the PS 260T.

There are no separate power connections to install since the necessary DC voltages are derived from the ASL party line.

The PS 260T is fully protected against wiring mistakes (reverse power) or short circuit in the interconnecting cables.

5.0 FRONT PANEL CONTROLS



The PS 260T contains two identical interface modules. Each interface has the following front panel controls:

1 POWER LED indicator
This LED illuminates if line power is supplied by an ASL separate power supply or an ASL master station, via the intercom party line

2 INPUT LEVEL control knob
This knob controls the level of the audio input signal before it is placed on the intercom line

3 OUTPUT LEVEL control knob
This knob controls the level of the intercom audio signal appearing at the output connector

4 SIDE TONE LEVEL trimmer
This trimmer controls the input/output separation

5 SIDE TONE HI trimmer
This trimmer controls the input/output separation in the high frequency range

6 SIDE TONE TEST knob
This hidden push button activates a test tone generator which adds a 200 Hz tone to the audio input circuitry. This to assist adjusting or checking the side tone trimmer settings.
The momentary push button can be reached with a pin or pen.

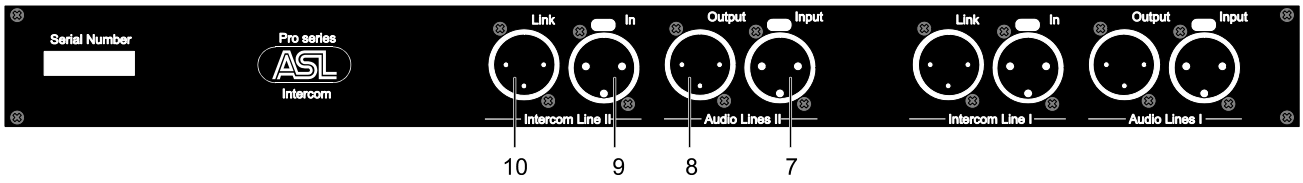
Side tone adjustment procedure:

- Connect a monitor amplifier + speaker to the audio output
- Turn up output level of the PS 260T to approx. 50%
- Bring the side tone trimmers in start position:
  Level trimmer: turn fully clockwise
  Hi trimmer: turn fully anti clockwise
- Activate the test tone generator.
- Minimize test tone level by turning the level trimmer anti clock wise.
- Minimize the remaining high frequencies of the test tone by turning the hi trimmer clockwise.

Repeat the two last mentioned procedures to obtain the lowest possible test tone levels.

The test tone is also heard by the users of the party line intercom, which is rather disturbing. ASL advises to not activate the test tone when the party line intercom system is in use.

6.0 REAR PANEL CONNECTORS



The PS 260T contains two identical interface modules. Each interface has the following rear panel connectors:

7 AUDIO INPUT connector (XLR-3)
The input is transformer balanced.
Pin assignments :
Pin 1: 0V / ground shield
Pin 2: signal +
Pin 3: signal -

8 AUDIO OUTPUT connector (XLR-3)
The output is transformer balanced and capable of driving a 600 ohms load.
For pin assignments see #7:

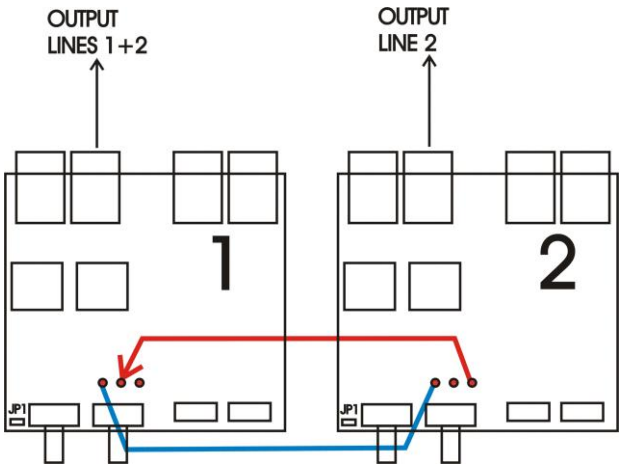
9 INTERCOM IN connector (XLR-3)
This connector is for connecting the intercom party line. Pin assignments :
Pin 1: 0V / ground shield
Pin 2: +30V power wire
Pin 3: audio wire

10 INTERCOM LINK connector (XLR-3)
This connector is for extending the intercom party line to other user stations or interface units. For pin assignments, see #9 .

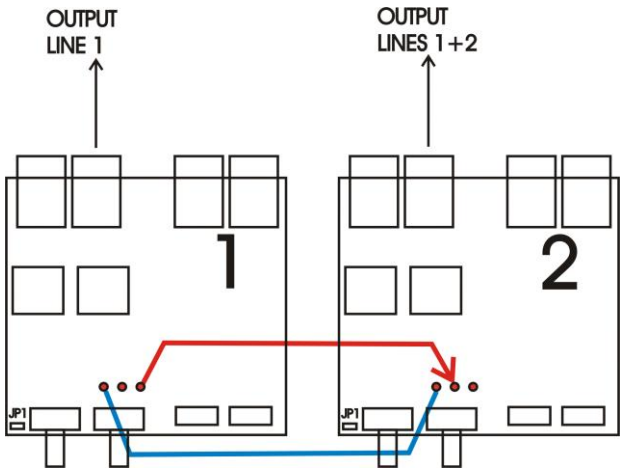
7.0 SUM OUTPUTS

Each intercom line can be monitored via the audio output of each interface module. This the factory setting.
If required, one interface module can monitor both intercom lines: the intercom audio signals of both intercom lines appear on the audio output connector of that interface module.
To achieve this, certain internal connections have to be made.

Procedure:
a. Unscrew the upper cover plate and slide it backwards
b. Place the unit in front of you, facing the front panel
c. Depending on which output connection is required, follow one of the procedures described below
d. Screw the cover plate back in place



Connection scheme A
Function:
Output of interface 1 monitors intercom lines 1 + 2
Actions:
Connect the right tag of interface 2 with the middle tag of interface 1. Connect the left tag of interface 2 to the left tag of interface 1.



Connection scheme B
Function:
Output of interface 2 monitors intercom lines 1 + 2.
Actions:
Connect the right tag of interface 1 with the middle tag of interface 2. Connect the left tag of interface 1 to the left tag of interface 2.

8.0 TECHNICAL SPECIFICATIONS

Intercom Line Driver
Max. output current: 3 mA rms
output impedance: > 150 Kohm

Input Amplifier
input impedance: 600 ohm (transformer balanced)
input level: +30 dBu to -10 dBu
frequency response: 150 Hz – 20 kHz (-3 dB)

Output Amplifier
output impedance : 600 ohm (transformer balanced)
maximum load: 600 ohms
max. output level: +20 dBu to -20 dBu
frequency response: 150 Hz - 20 kHz (-3 dB)

Side Tone Trimming
Rejection: better than 30 dB

Dimensions & Weight
width 19" (483mm)
height 1U (1,75" / 44.5mm)
depth 126 mm
weight 1565 grams

Party Line Specifications
supply voltage: +30V DC (12V to 32V DC)
supply current: 33 mA quiescent / each
audio line level: -18 dBu to 0 dBu
signal-to-noise: 80dB
station bridging impedance: > 150 kOhm

0 dBu is defined as 775 mV into open circuit

ASL reserves the right to alter specifications without prior notice

9.0 PARTY LINE, TECHNICAL CONCEPT

User stations in an ASL intercom system are connected via one or several 'party lines'. A party line offers two way (‘full duplex’) communication and consists of standard microphone (multi-pair) cable. One wire is used as an audio line, one as a power line and the screen of the cable functions as earth/return.
Current drive is used for signal transfer. Each station utilizes a current amplifier to amplify the microphone signal and place it on the common audio line where, due to the constant line impedance (situated in the power supply between XLR pin 3 and 1), a signal voltage is developed which can be further amplified and sent to the headphones or loudspeakers.

This principle has three advantages:

- the use of a single audio line allows several stations to talk and listen simultaneously
- due to the high bridging impedance offered by each station, the number of stations on the party line has no influence on the level of the communications signal
- power and audio to the intercom stations use the same cable

The Call signal is also sent as a current on the audio line. It develops a DC potential over the line impedance which will be sensed by each station and interpreted as a Call signal.

10.0 CABLING

The intercom lines (the ‘party lines’) are of the shielded two-conductor microphone cable type. The intercom line connectors are of the XLR-3 type. Audio and Call signals are on XLR pin 3, DC power is on XLR pin 2.
XLR pin 1 is connected to the shield of the cable which functions as the common return for audio and power.
The audio signal is transferred in an unbalanced way (see ‘Party Line, Technical Concept’).
To avoid earth loops (hum), the possible effect of electromagnetic fields and to minimize power loss, certain rules have to be obeyed when installing the cabling of an intercom system :

Use high quality cable
Use high quality microphone cable (shielded two conductor cable, minimum 2x 0.30 mm2).
In case multi-pair microphone cable is used, it should be of high quality and each pair should consist of two conductors (minimum 2x 0.15 mm2) with separate shield and an overall shield.

Use flexible cable
Use flexible single and multi-pair microphone cable instead of cable with solid cores, especially when the cable is subjected to bending during operation or installation.

Cable screens to XLR pin 1
The screen of each separate microphone cable and/or the screen of each single pair in a multi-pair cable, should be connected to pin 1 of each XLR-3 connector. Do not connect these screens to the metal housing of ASL unitst or XLR-3 wall boxes. See section ‘Earthing Concept’.

Connect metal cable trunks, wall boxes and overall multi-pair cable screens to clean earth
Metal cable trunks, metal wall boxes and overall multi-pair cable screens should be interconnected and, at the 'central earth point' in the intercom network only, be connected to a clean earth or a safety earth. (see section ‘Earthing Concept’).

Keep metal connection boxes and cable trunks or pipes isolated from other metal parts
Metal trunks or pipes for intercom cables and metal connection boxes should be mounted in such a way that they are isolated from any other metal housing or construction part.

Keep cables parallel as much as possible
When two (multi channel) units in a network are connected by more than one cable, make sure that these cables are parallel to each other over the whole distance between those units. When using multi-pair cable, parallelism is ensured in the best possible way.

Avoid closed loops
Always avoid that intercom cables are making a closed loop. So-called 'ring intercom' should not physically be cabled as a ring..

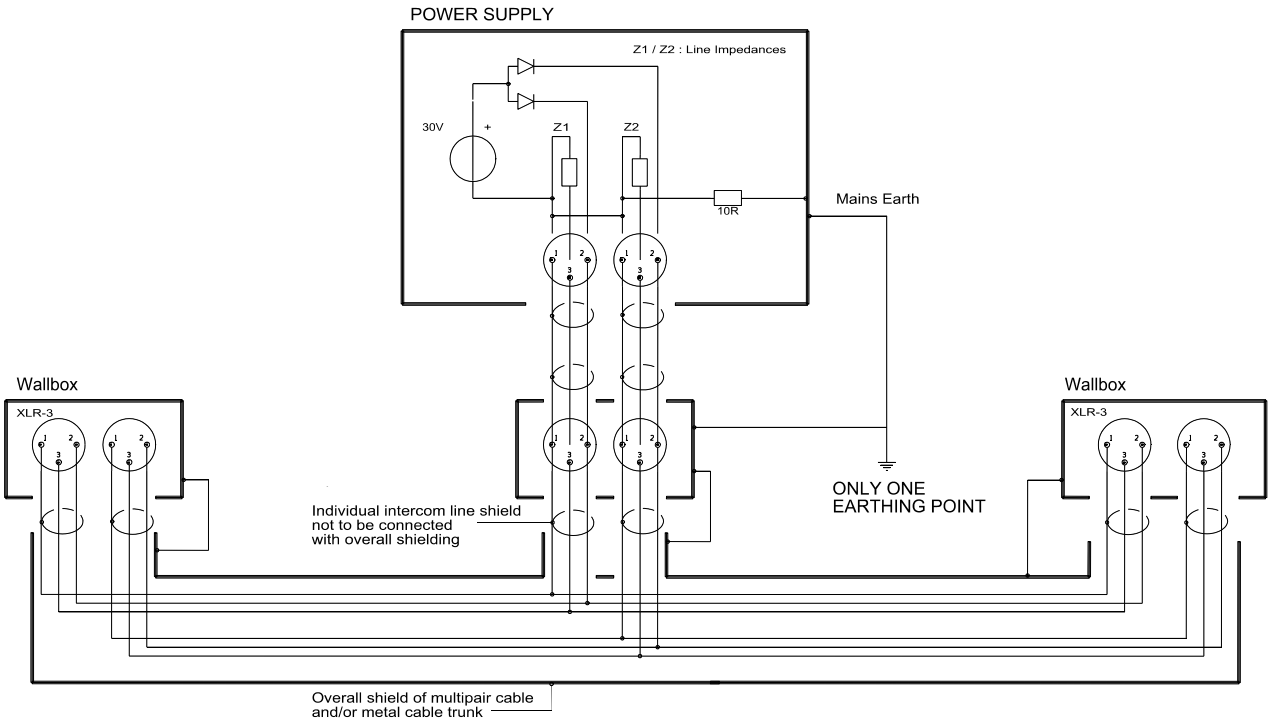
Keep cables away from electromagnetic sources
Keep intercom cables away from high energy cables, e.g. 115/230/400V mains power or dimmer controlled feeds for spotlights. Intercom cables should cross high energy cables at an angle of 90º only. Intercom cables should never be in the same trunks as energy cables.

Place power supply in a central position
In case of a system powered by a separate power supply: In order to diminish power losses, place the power supply as close as possible to where most power consumption occurs, in other words most user stations are placed.

ASL powered units to a 'clean' mains outlet
Master stations or power supplies should be connected to a mains outlet with a clean earth. Other audio equipment may be connected to this mains outlet, but avoid using an outlet which also powers dimmer controlled lighting systems.

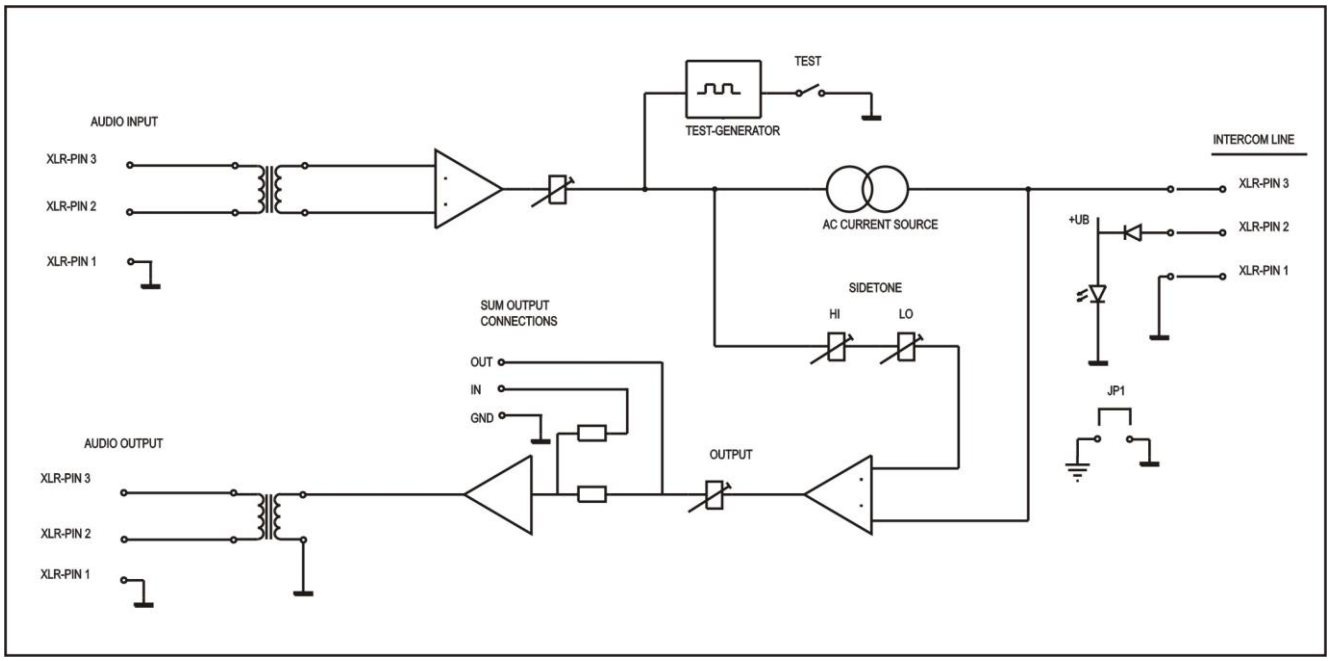
In case of more complex installations, don't hesitate to contact us for advice.

11.0 EARTHING CONCEPT

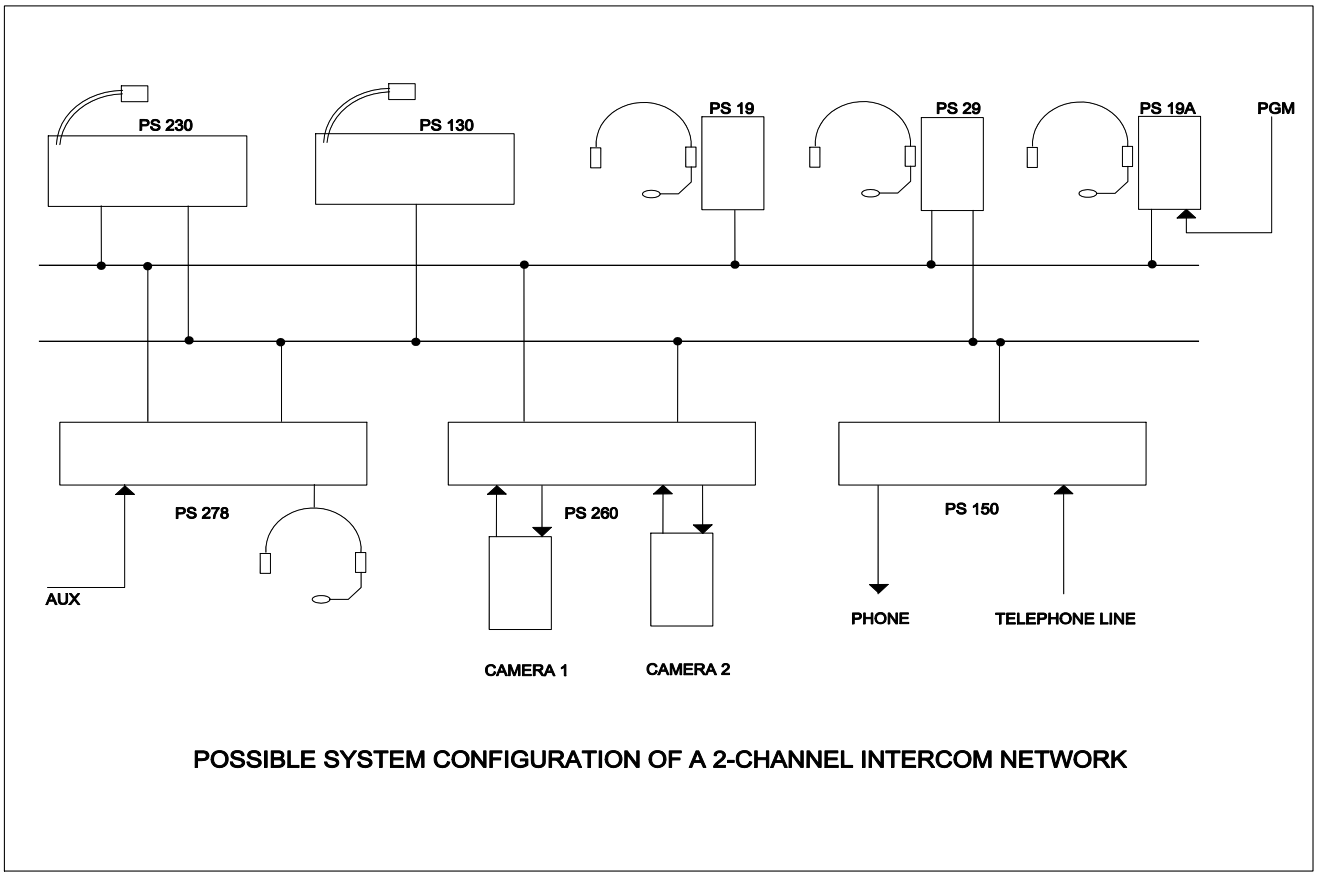


EARTHING CONCEPT
ASL INTERCOM

12.0 BLOCK DIAGRAM PS 260T



13.0 POSSIBLE SYSTEM CONFIGURATION



POSSIBLE SYSTEM CONFIGURATION OF A 2-CHANNEL INTERCOM NETWORK